

SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **Phosphoric Acid 59% Liquid**
 Product Use: Chemical raw material.
 Use as raw material for fertilizer solutions in agriculture and horticulture

Restriction of Use: Refer to Section 15

New Zealand Supplier: Horticulture Ltd
 Address: 10 Firth Street
 Drury, 2113

Telephone: +64 9 294 8453
 Fax Number: +64 9 294 7272

Emergency Telephone: 0800 764 766 (National Poison Centre)

Date of SDS Preparation: 13 October 2021

Section 2. Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

EPA Approval No: HSR001545

Pictograms



Signal Word: **DANGER**

GHS Classification and Category	Hazard Code	Hazard Statement
Acute oral toxicity Cat. 4	H302	Harmful if swallowed.
Corrosive to metals Cat. 1	H290	May be corrosive to metals.
Skin corrosion Cat. 1C	H314	Causes severe skin burns and eye damage.
Serious eye damage Cat. 1	H318	Causes serious eye damage.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P234	Keep only in original container.
P260	Do not breathe dust, fumes, gas, mist, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

P280	Wear protective clothing as detailed in Section 8.
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Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301 + P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage Code	Storage Statement
P405	Store locked up.
P406	Store in corrosive resistant/... container with a resistant inner liner.

Disposal Code	Disposal Statement
P501	Dispose of according to Local Regulations or Authorities

Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Phosphoric Acid	59 - 85	7664-38-2

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Immediately flush eyes with plenty of water (> 15min), occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist.
If on Skin	Wash immediately with lots of water (15 minutes)/shower. Remove polluted clothing and shoes. If skin burns appear, immediately call a POISON CENTER or doctor/physician.
If Swallowed	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Immediately consult a doctor/medical service.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:

Inhalation:	Coughing. Dry/sore throat. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Following symptoms may appear later: respiratory difficulties, risk of lung oedema.
Ingested:	Burns to the gastric/intestinal mucosa. Nausea. Abdominal pain. Blood in vomit. After absorption of high quantities: Shock.
Skin:	Caustic burns/corrosion of the skin. Delayed skin irritation and blistering.

Eye: Corrosion of the eye tissue. Symptoms may include: pain, lacrimation, redness of the eye tissue. Risk of serious permanent damages to eyes if the product is not rapidly removed.

Advice to Doctor: Treat symptomatically. An endoscope or a stomach wash might be considered but might cause severe stomach or oesophagus damage.

Section 5. Fire Fighting Measures

Hazard Type	The product is non-flammable and non-combustible.
Explosion hazard	On contact with ordinary metals (steel, galvanized, aluminium) corrosion may occur and generate highly flammable hydrogen gas.
Hazards from products	On burning: release of toxic and corrosive gases/vapours (phosphorus oxides).
Suitable Extinguishing media	All extinguishing media allowed. Extinguishing media for surrounding fires: Adapt extinguishing media to the environment. Do not use a heavy water stream.
Precautions for firefighters and special protective clothing	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Exposure to fire/heat: keep upwind, consider evacuation and have neighbourhood close doors and windows. Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
HAZCHEM CODE	2R

Section 6. Accidental Release Measures

Ensure adequate air ventilation. Avoid all eye and skin contact and do not breathe vapour and mist. Wear PPE as detailed in Section 8. Keep unnecessary and unprotected personnel from entering.

Prevent soil and water pollution. Prevent spreading in sewers. Stop leaks if possible. Dam up the liquid spill. If the product enters drains or sewers the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the National Rivers Authority.

Any spillage should be cleaned up immediately. Stop leaks if possible. Dam up the liquid spill. Contain released substance, pump into suitable containers. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Take account of toxic/corrosive precipitation water.

Collect as much as possible in a suitable clean container, preferably for re-use, otherwise for disposal. Neutralize leftovers with slaked lime or soda ash. Neutralized substance: shovel into closing drums. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Damaged/cooled tanks must be emptied. Wash clothing and equipment after handling.

Section 7. Handling and Storage

Precautions for Handling:

- Read label before use.
- Keep only in original container.
- Do not breathe dust, fumes, gas, mist, vapours or spray.
- Carry operations in the open air/under local exhaust or at sufficient ventilation to keep airborne levels below recommend/statutory exposure levels.
- Do not breathe vapor or mist.
- Do not get in eyes, on skin, or on clothing.

- Never dilute by pouring water to the acid. For preference use pumping techniques for unloading and discharging.
- Care for eyewash stations at the workplace.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective clothing as detailed in Section 8. If on skin, take off contaminated clothing.

Precautions for Storage:

- Store locked up.
- Keep out of reach of children.
- Store in corrosive resistant container with a resistant inner liner.
- Storage temperature: >-20°C - <42°C (59% - 75%) >+25°C - <42°C (85%)
- Keep away from heat sources.
- Keep away from strong bases, metals, oxidizing agents, sulfides and cyanides.
- Store in dry, cool, well-ventilated area.
- Keep out of direct sunlight.
- Provide for a tub to collect spills.
- Keep only in the original container.
- Unauthorized persons are not admitted.
- Secure fragile packaging's in solid containers.
- Packaging Materials: Stainless steel, glass, polyethylene (high density).

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³
Phosphoric acid [7664-38-2]	-	1	-	-

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2019 11TH EDITION.

Phosphoric acid 59% - 85% (7664-38-2)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	2 mg/m ³
Long-term - local effects, inhalation	1 mg/m ³
DNEL/DMEL (General population)	
Long-term - local effects, inhalation	0.73 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	pH: 6 - 9
PNEC (additional information)	
Additional information	PNEC values are not known or derived

Engineering Controls

If user operations generate dust/fog, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protection Equipment



Eyes	Provide eyes protection with splash-proof goggles or face shield in compliance with EN 166 norm. Avoid contact lenses.				
Hands	Type	Material	Permeation	Thickness (mm)	Standard
	Reusable gloves	Natural rubber, Chloroprene rubber (CR), Butyl rubber, Polyvinylchloride (PVC)	6 (> 480 min)	0,5	EN 374-3
	Reusable gloves	Fluoroelastomer (FKM)	6 (> 480 min)	0,4	EN 374-3
	Reusable gloves	Nitrile rubber (NBR)	6 (> 480 min)	0,35	EN 374-3
Skin	Acid-resistant clothing. Wear impervious rubber safety shoes.				
Respiratory	Carry operations in the open air/under local exhaust or at sufficient ventilation to keep airborne levels below recommend/statutory exposure levels. Mist formation: aerosol mask with filter type P2				
General	Do not smoke, eat or drink in the working places. Remove contaminated clothing. Have eye wash bottle or eye rinse ready to use and a shower at work place. Wash hands before eating or drinking.				

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Colourless
Odour	Odourless
Odour Threshold	Not available
pH	<1
Boiling Point	135 °C (75% w/w)
Melting Point	Not available
Freezing Point	50%: -41,9°C ; 75%: -20°C ; 85%: 21°C
Flash Point	Not available
Flammability	Not flammable
Upper and Lower Explosive Limits	Not available
Vapour Pressure	6.5 hPa (20 °C)
Relative vapour density at 20 °C	3.4 (@ 75% w/w) at 20 °C
Relative Density	1.6 (@ 75% w/w)
Density	1,42 – 1,68 kg/l (59% - 85% w/w)
Solubilities	Water: Complete
Log Pow	-0.77 (Estimated value)
Auto-ignition Temperature	Not available
Decomposition Temperature	> 200 °C
Viscosity, dynamic	0.015 Pa.s (@ 75% w/w/, 20 °C)
Particle Characteristics	Not available
VOC Content	0%
Other Properties	Clear. Substance has acid reaction.

Section 10. Stability and Reactivity

Stability of Substance	Stable under normal conditions.
Reactivity	Reacts violently with (strong) bases Very flammable gas (hydrogen) may be formed on contact with metals.
Possible hazardous reactions	Reacts with (some) metal powders: release of highly flammable gases/vapours hydrogen. Violent to explosive reaction with many compounds e.g.: with

	(strong) oxidizers and with (some) bases.
Conditions to Avoid	Avoid high temperatures. Light (daylight).
Incompatible Materials	May be corrosive to some metals. Keep substance away from: strong bases. reducing agents. oxidizing agents.
Hazardous Decomposition Products	On burning: release of toxic and corrosive gases/vapours (phosphorus oxides).

Section 11 Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes serious eye damage. Symptoms may include: lacrimation, redness of the eye tissue. Risk of serious permanent damages to eyes if the product is not rapidly removed. pH: < 1
Skin	Causes severe skin burns. Symptoms may include: red skin, pain, blisters pH: < 1

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.

Phosphoric acid 59% - 85% (7664-38-2)

LD50 oral rat	300 - 2000 mg/kg (75% H3PO4, Rat OECD 423)
LD50 dermal rat	No specific data
LC50 inhalation rat (mg/l)	No specific data

Phosphoric acid 59% - 85% (7664-38-2)

LOAEL (oral, rat, 90 days)	250 mg/kg bodyweight/day (OECD 422)
LOAEL (dermal, rat/rabbit, 90 days)	No data available
LOAEL (inhalation, rat, gas, 90 days)	No data available
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight/day (OECD 422)

Section 12. Ecotoxicological Information

Ecology - water: Mild water pollutant (surface water). Slightly harmful to fishes. May cause eutrophication. Toxic to plankton. Slightly harmful to bacteria. Slightly harmful to aquatic organisms. pH shift.

Persistence and degradability	Phosphoric acid 59% - 85% (7664-38-2): Not applicable.
Bioaccumulation	Phosphoric acid 59% - 85% (7664-38-2): Log Pow: -0.77 (Estimated value)
Mobility in Soil	Phosphoric acid 59% - 85% (7664-38-2): Ecology - Soil - Solubility in water.
Other adverse effects	May cause pH changes in aqueous ecological systems.

Phosphoric acid 59% - 85% (7664-38-2)

LC50 fish 1	3 - 3.25 mg/l <i>Lepomis macrochirus</i>
EC50 Daphnia 1	> 100 mg/l (OECD 202)
EC50 72h algae (1)	> 100 mg/l <i>Desmodesmus subspicatus</i> , OECD 201
NOEC chronic algae	100 mg/l <i>Desmodesmus subspicatus</i> , OECD201

Product Name: Phosphoric Acid 59% Liquid
Date of SDS: 13 October 2021

SDS Prepared by: Technical Compliance Consultants (NZ) Ltd
Tel: 64 9 475 5240 www.techcomp.co.nz

Section 13. Disposal Considerations

Waste treatment methods:

Empty and rinsed containers can be disposed as non-hazardous material or be returned for recycling.

Sewage disposal recommendations:

Neutralize with, if necessary, for example, a sodium carbonate solution until neutral pH (5.5 < pH < 8.5).

Product/Packaging disposal recommendations:

Remove waste in accordance with local and/or national regulations. Use appropriate containment to avoid environmental contamination. Care should be taken when handling emptied containers that have not been cleaned or rinsed out.

Additional information:

Storage containers must be free of contamination before use.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ; NZS 5433:2012



Road, Rail, Sea and Air Transport

UN No	1805
Class - Primary	8
Packing Group	III
Proper Shipping Name	PHOSPHORIC ACID SOLUTION
Marine Pollutant	No
Special Provisions	If the product's individual container is below 5L, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

Section 15 Regulatory Information

EPA Approval Code: **HSR001545**

HSWA & EPA Controls	Trigger Quantity
Certified Handler	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	1000L
Emergency Response Plan	10 000L
Secondary Containment	10 000L
Restriction of Use	None

Section 16 Other Information

Glossary

Cat	Category
EC ₅₀	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC ₅₀	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD ₅₀	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.

OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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Please contact the New Zealand distributor, if further information is required.

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